FIG. 1

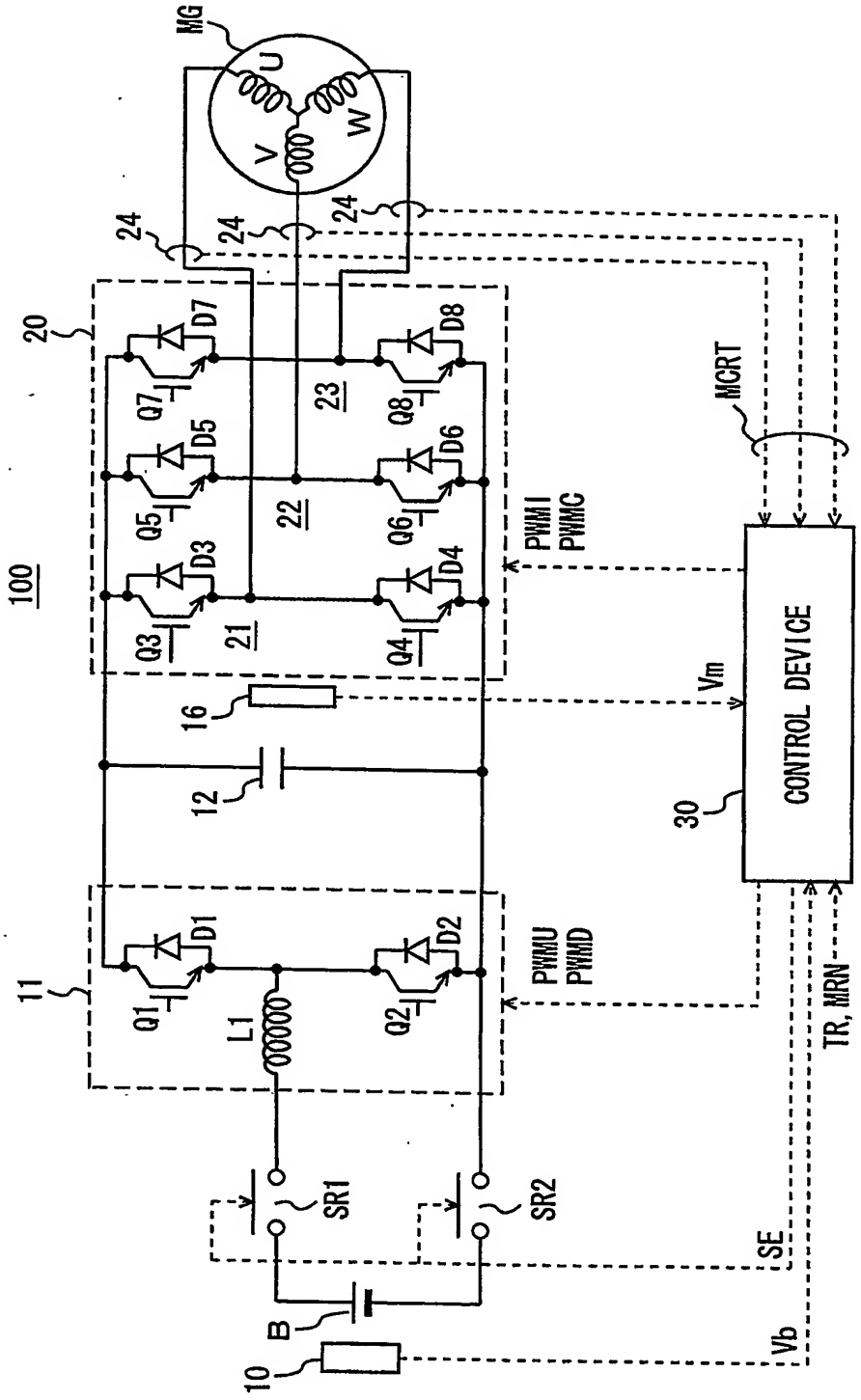

MG
U
V
W
24
24
24
20
D7
D8
Q7
Q8
23
D5
D6
Q5
Q6
22
D3
D4
Q3
Q4
21
100
PWMI
PWMC
MCRT
CONTROL DEVICE
Vm
16
12
30
D1
D2
Q1
Q2
L1
11
PWMU
PWMD
TR, MRN
SR1
SR2
SE
B
10
Vb

FIG. 2

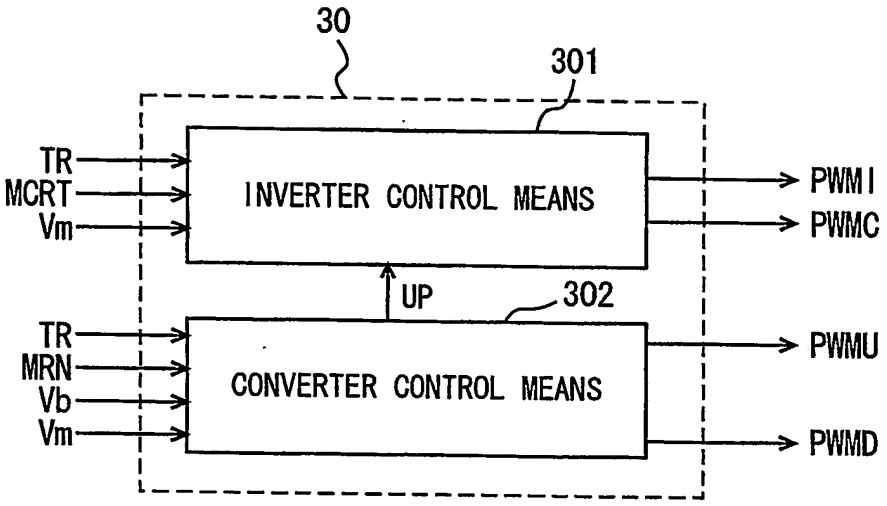

30
301
TR
MCRT
Vm
INVERTER CONTROL MEANS
PWMI
PWMC
UP
302
TR
MRN
Vb
Vm
CONVERTER CONTROL MEANS
PWMU
PWMD

FIG. 3

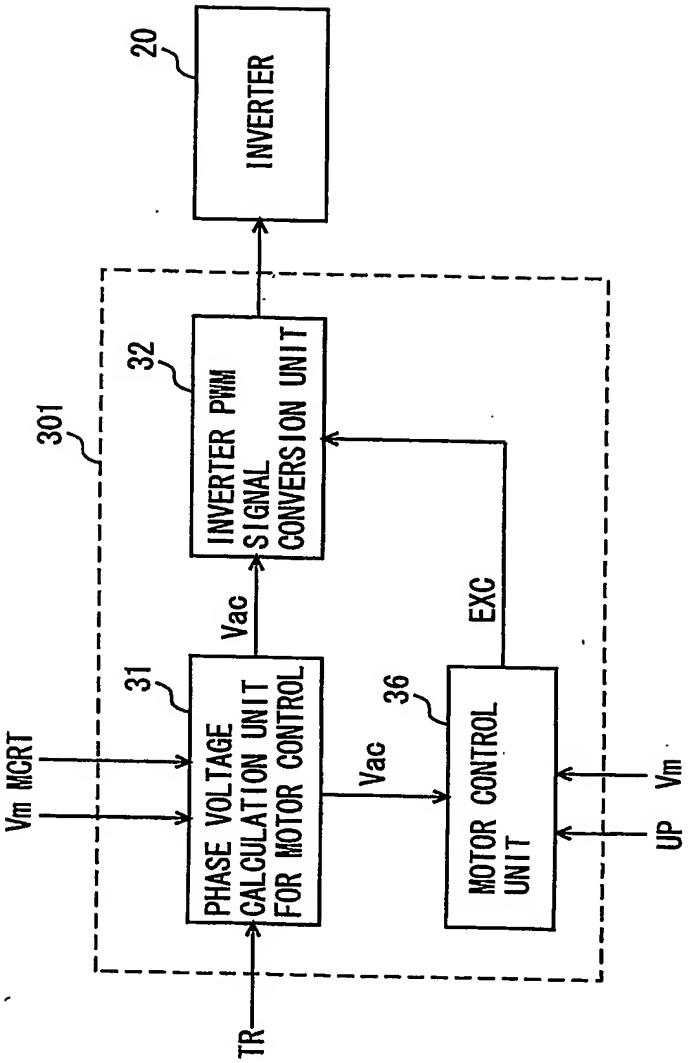

20
INVERTER
301
32
INVERTER PWM SIGNAL CONVERSION UNIT
Vac
EXC
31
36
Vm MCRT
PHASE VOLTAGE CALCULATION UNIT FOR MOTOR CONTROL
Vac
MOTOR CONTROL UNIT
Vm
UP
TR

FIG. 4

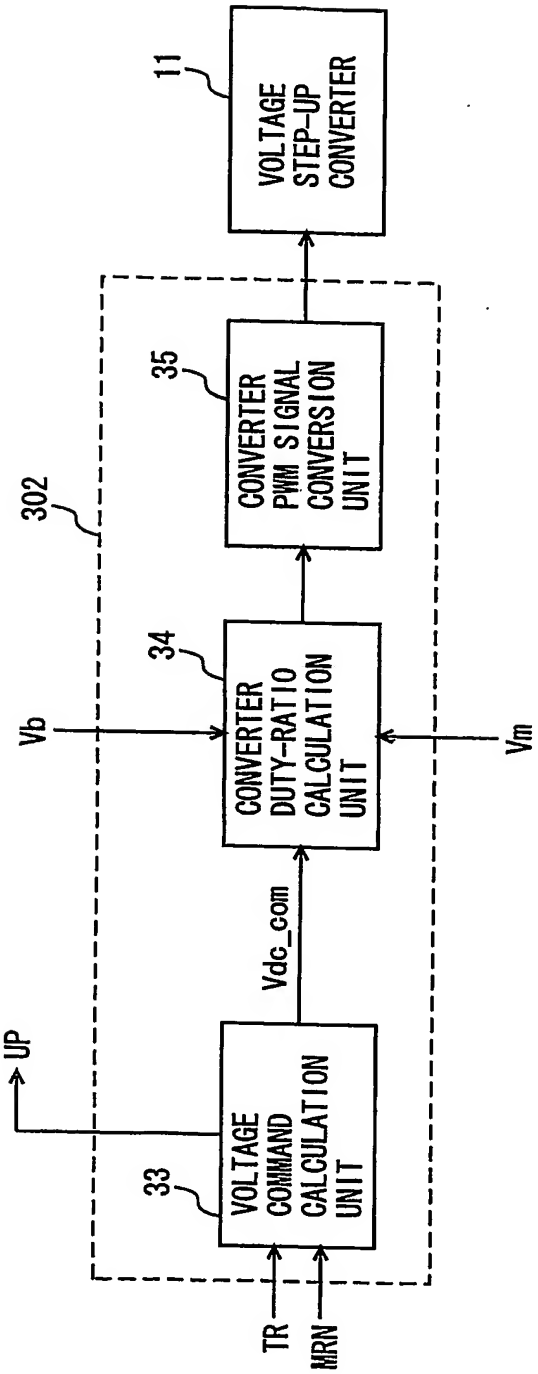

11
VOLTAGE STEP-UP CONVERTER
35
CONVERTER PWM SIGNAL CONVERSION UNIT
302
34
CONVERTER DUTY-RATIO CALCULATION UNIT
Vb
Vm
Vdc_com
UP
33
VOLTAGE COMMAND CALCULATION UNIT
TR
MRN

FIG. 5

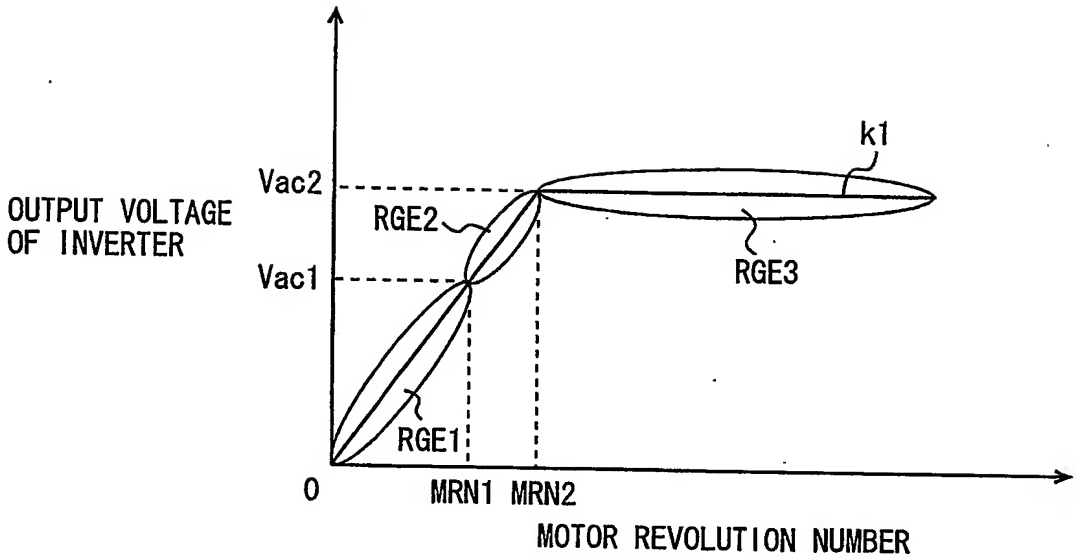

OUTPUT VOLTAGE
OF INVERTER
Vac2
Vac1
RGE2
RGE1
RGE3
k1
0
MRN1
MRN2
MOTOR REVOLUTION NUMBER

FIG. 6

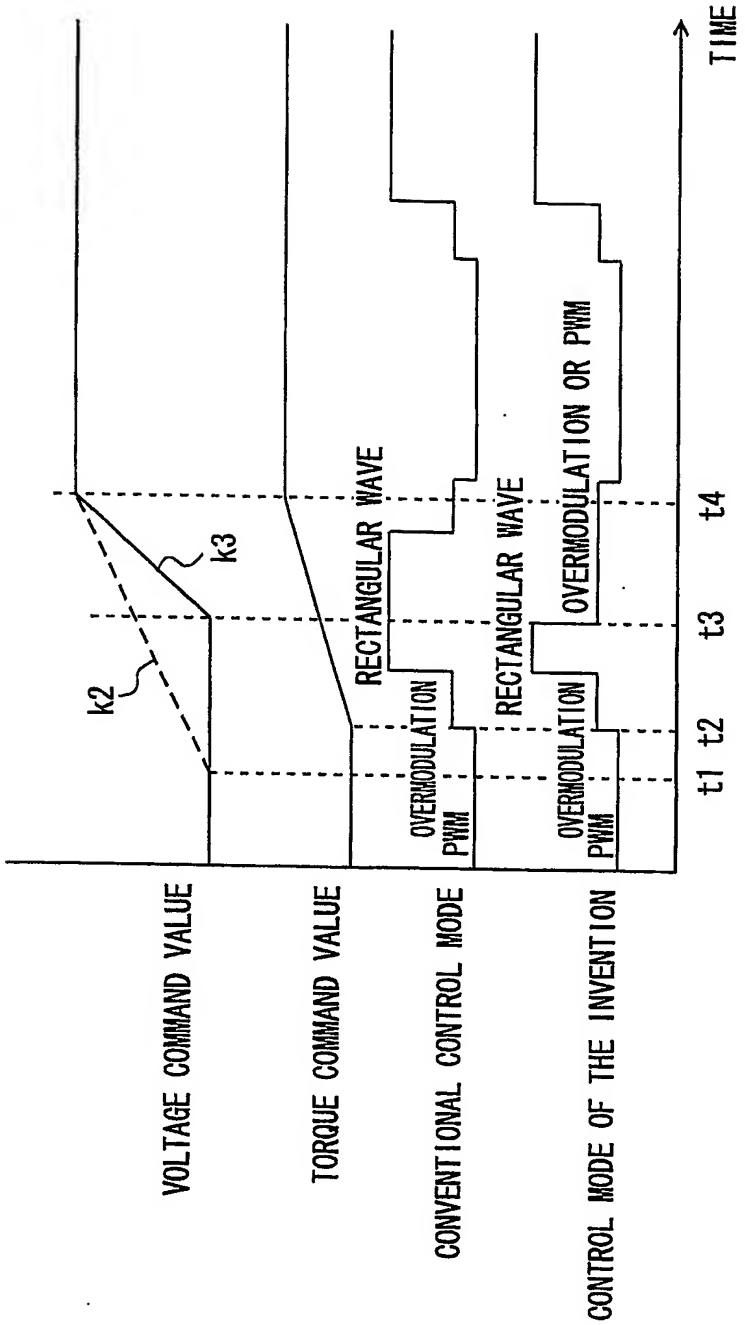

VOLTAGE COMMAND VALUE
TORQUE COMMAND VALUE
CONVENTIONAL CONTROL MODE
CONTROL MODE OF THE INVENTION
k2
k3
OVERMODULATION PWM
RECTANGULAR WAVE
OVERMODULATION PWM
RECTANGULAR WAVE
OVERMODULATION OR PWM
t1 t2 t3 t4
TIME

FIG. 7

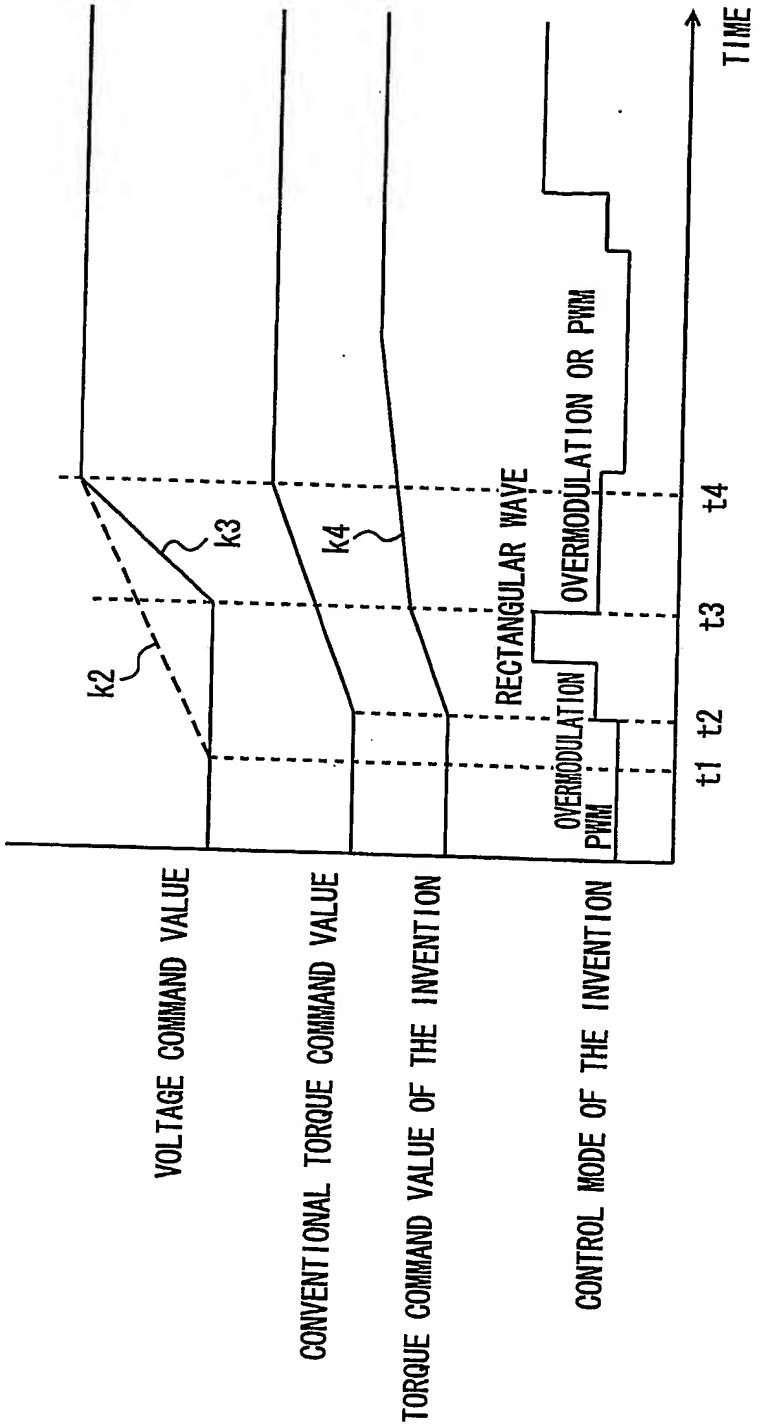
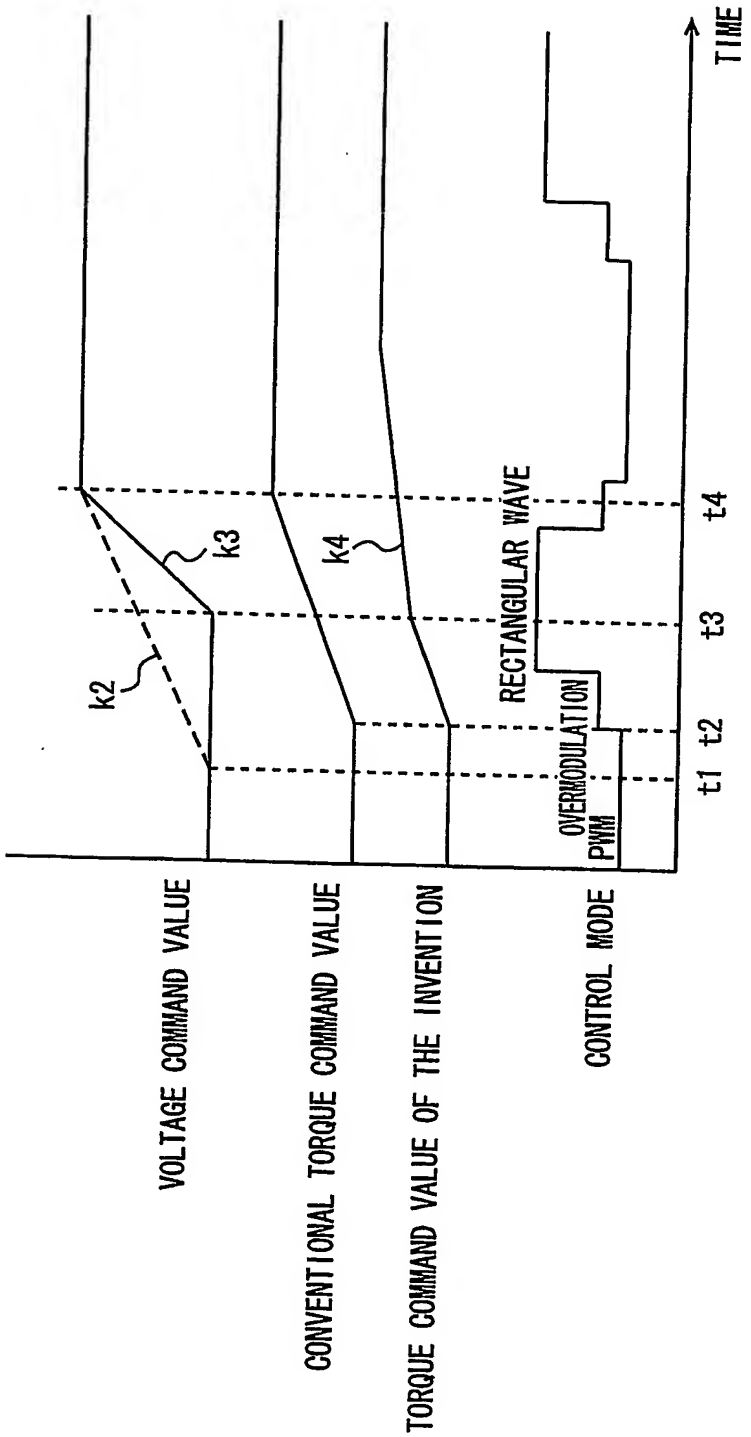

VOLTAGE COMMAND VALUE
CONVENTIONAL TORQUE COMMAND VALUE
TORQUE COMMAND VALUE OF THE INVENTION
CONTROL MODE OF THE INVENTION
k2
k3
k4
OVERMODULATION PWM
RECTANGULAR WAVE
OVERMODULATION OR PWM
t1 t2 t3 t4
TIME

FIG. 8


VOLTAGE COMMAND VALUE
CONVENTIONAL TORQUE COMMAND VALUE
TORQUE COMMAND VALUE OF THE INVENTION
CONTROL MODE
PWM
OVERMODULATION
RECTANGULAR WAVE
k2
k3
k4
t1
t2
t3
t4
TIME